



Figure 13 - Spur and draw.



Figure 14 - Cliff.



Figure 15 - Cut and fill.

The five major terrain features have been previously presented. Now, the five minor/supplementary terrain features will receive a brief mention. They are the **draw**, **spur**, **cliff**, and **cut and fill**. The **draw**, a mini version of the valley, and the **spur** are depicted in Figure 13.

Figure 14 depicts a **cliff**, a vertical or near-vertical feature. It is an abrupt and potentially dangerous change in the terrain. It shows that the slope is so steep for a cliff, that accordingly the contour lines are close together enough to merge into one line.

Cut and fill are features not commonly used to navigate. However, they are

discussed and shown since you may see them on a map and wonder what they mean. A **cut** is a man-made feature resulting from cutting through raised ground. This is usually done to form a relatively level bed for a road or railroad track. Graphics show tick marks that extend from the cut line to the roadbed, similar to a depression. **Fill** is just the opposite. Fill is a man-made feature resulting from filling in a low area. Tick marks point towards lower ground. See both cut and fill in Figure 15.

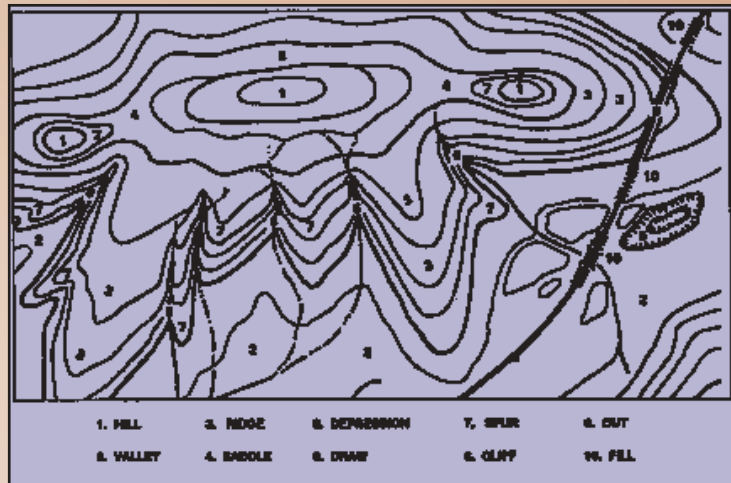


Figure 16 - Terrain features.

Figure 16 is a graphic that includes all ten features discussed here and in previous articles. Test your memory and try to identify them before looking at the answers. 🧐

Most graphics were previously published by the USGS or military.

Topographic Maps and Southern Pine Beetle Detection

The use of topographic maps is an essential part of the Southern Pine Beetle (SPB) detection surveys. The observers in an aircraft mark the location of active SPB infestations using a Global Positioning System (GPS). This GPS data is then put on a topographic map. The map is sent to the landowner whose trees are infested. Using the information in the "Contour Lines and Topographic Map" article, the landowner should be able to find the SPB infestation on the ground and begin control measures. (See example of a topographic map with an SPB infestation denoted.)

